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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,979	12/30/2003	Koji Mishima	890050.454	8832
500	7590	10/10/2006	EXAMINER	
SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVE SUITE 6300 SEATTLE, WA 98104-7092				ANGEBRANNNDT, MARTIN J
ART UNIT		PAPER NUMBER		
		1756		

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/748,979	MISHIMA ET AL.
	Examiner	Art Unit
	Martin J. Angebranndt	1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 6/5/06, 6/6/05 & 12/30/03.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-31 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-31 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>6/5/06, 6/6/05 & 12/30/03</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

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1. The foreign references identified in the IDS of 06/05/2006 were not supplied and are not of record in the file. Therefore they have been lined through. The applicant filed an IDS on 6/5/06 which lists well over 100 references. Of these, numerous references do not appear particularly relevant to the instant claims are cited. It is unclear why these were cited because they do not appear to be "material to patentability" of the claimed invention (37 CFR 1.56).

MPEP 2004, particularly paragraph (13), sets forth guidelines to aid applicants in their duty of disclosure. In this section it is stated "It is desirable to avoid submission of long lists of documents if it can be avoided. Eliminate clearly irrelevant or marginally pertinent cumulative information. If a long list is submitted, highlight those documents, which have been specifically brought to the applicant's attention and/or are known to be of most significance. See Penn Yan Boats, Inc., v. Sea Lark Boats, Inc., 359 F. Supp. 948, 175 USPQ 260 (S.D. Fla. 1972), aff'd, 479 2d 1388, 178 USPQ 577 (5th Cir. 1973), cert. denied 414 U.S. 874 (1974)."

In an effort to clarify the "material" nature of these references to the patentability of the instant claims, applicants are requested to specify why each of the above referred to references were cited. (Note Applicants' PTOL-1449).

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the plural recording layers containing compounds of the metal and the element X together with elemental Mg, Al or Ti and where the element X being present as part of a compound and limited to C,O,N, and S, does not reasonably provide enablement for the MX

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not forming a compound initially, the reaction taking place in the absence of elemental Ti, Al or Mg or X being present in elemental form or being other than O,S, C and N. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The claims should indicate that recording layer containing the element M is a layer in contact with a layer containing a compound including the element X, which is one of S,O,C and N. (see figure 3)

The claims currently imply that there can be two different layers containing M and X and that they do not form a compound, but are separate. [0193] and other examples. The claims also fail to identify that element X is part of a compound with the metal X.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole

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would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Fukano et al. '860.

The first recording layer is held to be GeS_x layer 180-185 nm thick, the interlayer is the 1-5 nm ZnS layer and the second recording layer is held to be the 65 nm In layer. (see figure 2). In figure 2, the interlayer is C. The interlayer is held to prevent the two recording layers from reacting as discussed in column 2 at lines 54-58). The second recording layer can be Sn, In, Sb, Bi, Pb, Cr, Mn, Fe, Ni, Cu, Zn or Ag. (3/5-11). The first recording layer may be GeS, Ge-Zn-S, Ge-O-S (2/63-3/4). The barrier layer can be an oxide carbide, nitride, boride, sulfide, phosphide or a metal (3/12-20).

The applicant can obviate this rejection by following the suggestions above, which also would address the 112 rejections.

8. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano et al. '860.

It would have been obvious to modify the cited examples by using other elements, such as Sn, Bi, Pb, Ni, Cu, or Zn in place for the In with a reasonable expectation of forming a useful optical recording medium based upon the disclosure of equivalence.

9. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Erdogan et al. '652.

See the interferences films where silica is one of the layers.

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The claims language does not specify what the first recording layer is, it merely seeks to specify what at least one of the other recording layers is and therefore does not preclude the first recording layer being silica.

The current claims read on the recording layers merely being dielectric layers. The applicant should include the active ingredients (the metals, Al, Mg or Ti) in all the claims to provide more legally defensible claims language.

10. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(e) as being fully anticipated by JP 54-133134.

JP 54-133134 teaches alternative layers of Indium oxide (5 nm) and Manganese oxide (2 nm) until a thickness of 540 nm is achieved. This is written upon using a 488 nm argon ion laser (upper left and right columns and lower left column on page 5). Example 3 discusses the dispersion of the components in a single layer as shown in figure 2, rather than the alternating layer embodiments illustrated in figures 1,3 and 4

The claims do not preclude the recording layers reacting with adjacent layers.

11. Claims 1-3,6-8,11-13,16-22 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sigyo et al. '611, in view of Nakane et al. '533 and JP 54-133134.

Sigyo et al. '611 teaches mixed recording layers where a metal, such as Mg, Ti, Nb, W, Ni, Cu, Zn, Al, In, Si, Ge, Sn, Bi or others, is dispersed in the layer containing the Ga₂S₃ or MnO₃. The mixture layers can be 10-200 nm thick, but are preferably 20-60 nm. (4/54-60).

Nakane et al. '533 teach the formation of back to back optical recording media having the structure shown in figure 1 where the two recording layers (6) are separated. The recording layers are bilayers (7,8) which undergo alloying reactions (4/56-62).

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It would have been obvious to one skilled in the art to modify the invention of Sigyo et al. '611 by forming a multilayered medium as shown by Nakane et al. '533 where one of the alloying recording layers is replaced by the mixed layer of Sigyo et al. '611 based upon the disclosure equivalence of the bilayer and the mixed layer as evidenced by JP 54-133134 with a reasonable expectation of forming a useful optical recording medium

12. Claims 1-3,6-8,11-13,16-22 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sigyo et al. '611, in view of Nakane et al. '533 and JP 54-133134, further in view of Shuy et al. '160.

Shuy et al. '160 teaches a transparent layer of Ge, Si, GaP, InP, GaAs, InAs, ZnSb, TiO₂, Sb-Zn oxide as a transparent layer (30) in a thickness of 5-500 nm and reflective layer (40) may be Ag, Al, Au, Pt, Cu, Sn, Ir, Ta and alloys and/or combinations thereof in a thickness of 1-500 nm. [0026-0027]. The examples use silicon and gold as the materials. In figure 1A, the provision of thermal manipulation layers (dielectric layers) is disclosed and the use of protective layers is disclosed. (60). Shuy et al. '160 further teaches in embodiment 4 that a substrate (10) with a layering sequence of ZnS-SiO₂/ Si/ (Si-Au)/(ZnS-SiO₂)₂ is formed. The recording uses 1-5 V pulses at 780 nm. The examples use 2 or 3V.

In addition to the basis provided above, it would have been obvious to one skilled in the art to modify the media resulting from the combination of Sigyo et al. '611 with Nakane et al. '533 and JP 54-133134 by using other alloying recording layers, such as the Ge/Si layers taught by Shuy et al. '160 with a reasonable expectation of forming a useful optical recording medium based upon both Nakane et al. '533 and Shuy et al. '160 using alloying bilayers as the recording layers.

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13. Claims 1-3,6-8,11-13,16-22 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akahira et al. '018, in view of Nakane et al. '533.

Akahira et al. '018 teach the formation of mixed layers of Al and Cu₂O to a thickness of 100 nm in example 3. In example 4, the mixture is Al and Indium oxide, and in example 5 the mixture is Al and lead oxide. The use of thickness of 50 nm is disclosed.

It would have been obvious to one skilled in the art to modify the invention of Akahira et al. '018 by forming a multilayered medium as shown by Nakane et al. '533 where one of the alloying recording layers is replaced by the mixed layer of Akahira et al. '018 based upon the disclosure equivalence of the bilayer and the mixed layer as evidenced by Akahira et al. '018 with a reasonable expectation of forming a useful optical recording medium

14. Claims 1-3,6-8,1-13,17-25 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. '275.

Suzuki et al. '275 teaches in working example 21, a recording layer having a 20 nm Bi/ZnS/ SiO₂ layer in contact with a 14 nm In layer. (table 2/col 15). Working example 27 includes a 20 nm In/ZnS/ SiO₂ layer in contact with a 30 nm Te layer. The embodiment of figure 4 has two recording media comprising the recording bilayers (3/4) provided on a substrate and coated with a protective layer (5) and adhered together via an adhesive layer 8. The protective layer can be the materials listed at 10/62+ and may have a thickness of 5-200 nm. (10/63-11/10). There may be an interlayer of the materials disclosed in column 10 and may have a thickness of 10-20 nm (10/23-52). There may be a bedding layer to protect the substrate (9/59-10/22). The second recording layer (4) may be As, Se, Sb, Te or Bi and may have nitrides, oxides, phosphides or sulfides included (6/59-7/35) and a thickness of preferably 5-50 nm (8/46-54). The

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first recording layer. The first recording layer can include various metals including Cu, Si, Ge, Sn, In, Pb, Zn and can have additives such as MoS₂, MgF₂, NiS, NiS₂, Cu₂S, ZnS, In₂O₃, In₂S₃, GeS, GeS₂, SnS, SnS₂, PbS, Bi₂S₃, MoO, InO, GeO, PbO, SiO, SiO₂, SiC, TiC and others. The thickness of the first recording layer can be 5-50 nm (8/30-40).

It would have been obvious to one skilled in the art to modify the cited examples by providing them with an interlayer to increase their stability and the speed of reaction to be controlled as discussed in column 10 resulting in a medium with two identified recording layers. Further it would have been obvious to one skilled in the art to modify the resultant media by providing a protective layer and adhering the recording media together as shown in figure 4 to double the recording capacity. This results in a recording medium with four identified recording layers having thicknesses of 5-50 nm with two of those recording layers having a composition bounded by the recitation of the claims.

Alternatively it would have been obvious to one skilled in the art to modify the cited examples by providing a protective layer and adhering the recording media together as shown in figure 4 to double the recording capacity. This results in a recording medium with two recording bilayers with each layer having thicknesses of 5-50 nm with each of the recording bilayers having a composition bounded by the recitation of the claims.

Further, it would have been obvious to modify the ZnS/SiO₂ recording layers by replacing adding Al as discussed in column 6 at lines 23-26 and/or to add other sensitization agents such as MgF₂ or TiC with a reasonable expectation of forming a useful optical recording medium based upon the disclosure of equivalence.

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15. Claims 1-3,6-8,1-13,17-25 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. '275, in view of Shuy et al. '160.

In addition to the basis provided above, it would have been obvious to one skilled in the art to modify the media rendered obvious by Suzuki et al. '275 by using other alloying recording layers, such as the Ge/Si layers taught by Shuy et al. '160 for the first recording layer with a reasonable expectation of forming a useful optical recording medium based upon both Suzuki et al. '275 and Shuy et al. '160 using alloying bilayers as the recording layers.

16. Claims 1-27 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. '275, in view of Nee '334 and Nishida et al. '881.

Nee '334 teaches optical recording media where there are three recording layers with respect to figure 4. The reflectivity of the layers is different with the further layers being more reflective while the nearer layers are partially transmissive to allow accessing of all of the recording layers [0046].

Nishida et al. '881 teach multilayered recording media with four recording layers on each of the substrates with respect to figure 3 (12/65-13-/52). The multilayered recording media are not limited to read only media, but may include writable recording layers (15-17, fourth embodiment and 29/30-51).

It would have been obvious to one skilled in the art to modify the cited examples of Suzuki et al. '275 by providing a protective layer and adhering the recording media together as shown in figure 4 to double the recording capacity. This results in a recording medium with two recording bilayers with each layer having thicknesses of 5-50 nm with each of the recording bilayers having a composition bounded by the recitation of the claims and further by adding

more recording bilayers as taught by Nee '334 and Nishida et al. '881 to increase the information density of the medium as a whole with a reasonable expectation of success.

17. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. '275, in view of Nee '334 and Nishida et al. '881, further in view of Shuy et al. '160.

In addition to the basis provided above, it would have been obvious to one skilled in the art to modify the media rendered obvious by Suzuki et al. '275 combined with Nee '334 and Nishida et al. '881 by using other alloying recording layers, such as the Ge/Si layers taught by Shuy et al. '160 for the first recording layer with a reasonable expectation of forming a useful optical recording medium based upon both Suzuki et al. '275 and Shuy et al. '160 using alloying bilayers as the recording layers.

18. Claims 1-3,6-8,1-13,17-25 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. '275, in view of Takahashi et al. '706.

Takahashi et al. '706 teach useful metals for the heat mode recording layer including In, As, Sb, Bi, Se, Te, Mg, Al and Ti. (3/52-58). Additives including various oxide, fluoride and sulfides can be added to increase the sensitivity either as a separate layer or being mixed with the metal. (4/1-33). The thickness when the recording layer is a single layer, rather than a laminate is 5-2000 nm. (3/59-63).

It would have been obvious to one skilled in the art to modify the cited examples of Suzuki et al. '275 by providing a protective layer and adhering the recording media together as shown in figure 4 to double the recording capacity and forming single layer recording layers with thickness of 5-50 nm as taught by Takahashi et al. '706, rather than recording bilayers, noting the similar recitation of metals within the references. This results in a recording medium with two

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recording layers each having thicknesses of 5-50 nm with each of the recording layers having a composition bounded by the recitation of the claims.

19. Claims 1-27 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. '275, in view of Takahashi et al. '706 and further in view of Nee '334 and Nishida et al. '881.

In addition to the basis above, it would have been obvious to modify the media resulting from the combination of Suzuki et al. '275, in view of Takahashi et al. '706 by adding more recording bilayers as taught by Nee '334 and Nishida et al. '881 to increase the information density of the medium as a whole with a reasonable expectation of success.

20. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. '275, in view of Takahashi et al. '706 and further in view of Nee '334 and Nishida et al. '881.

In addition to the basis provided above, it would have been obvious to one skilled in the art to modify the media rendered obvious by Suzuki et al. '275 combined with Takahishi et al. '706, Nee '334 and Nishida et al. '881 by using other alloying recording layers, such as the Ge/Si layers taught by Shuy et al. '160 for the first recording layer with a reasonable expectation of forming a useful optical recording medium based upon both Suzuki et al. '275, Takahishi et al. '706 and Shuy et al. '160 using alloying bilayers as the recording layers.

21. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

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Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

22. Claims 1-31 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-19 of copending Application No. 10/818324. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims seek coverage for similar recording media..

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP 62-226442 teaches a recording layer comprising Pb, Sn, Zn, Bi or Sb added to In together with GeS_x to form a heat mode recording layer.

JP 62-226440 teaches a metal layer adjacent to an Au, In and GeS recording layer.

JP 56-124134 teaches an In/ SiO₂ recording layer.

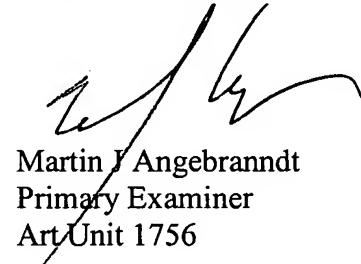
JP 60-219097 teaches an MoO₃ layer in contact with a metal containing layer.

Wada et al. '889 and Wada et al. '991 teaches metal/metal compound recording layers

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Martin J Angebranndt
Primary Examiner
Art Unit 1756

9/29/2006